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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,750	10/23/2003	Steven F. Oakland	BUR920030124US1	2749
21254	7590	06/16/2004	EXAMINER	
MCGINN & GIBB, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			WELLS, KENNETH B	
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 06/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/605,750

Applicant(s)

OAKLAND ET AL.

Examiner

Kenneth B. Wells

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/23/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. The drawings are objected to because transistor 108 is not labeled in instant Fig. 1. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. Claims 2 and 3-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point

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out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, it is misdescriptive to recite that the power supply is un-interruptible, i.e., the first power supply is referring to power supply VDDi in instant Fig. 4 which is described as being interruptible, not un-interruptible.

Claim 3 is misdescriptive because the cut-off control device is not a separate element from the state saving latch, i.e., it is an integral part of the state saving latch, and thus the two should not be recited as separate elements. Note the same problem in claims 19 and 20.

In claims 6 and 9, the phrase "high threshold" is indefinite because it is relative terminology which is prohibited in the claims unless clearly defined in the specification or claims. Since neither the specification nor claims define how high the threshold voltage must be to be considered "high" and thus within the scope of claims 6 and 9, these claims are indefinite under 112, second paragraph. The same problem exists for "low threshold" in claim 7.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 11 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Coughlin, Jr et al, cited by applicant.

As to claim 1, the recited second and first latches read on the latches formed by FETs T12 through T15 and FETs T20-T23, respectively.

As to claims 2, 3 and 12, the cut-off device is the combination of FETs T8 and T10, which respond to control signal FENCEN; and the pair of true and complement latch nodes read on the drains of FETs T9 and T11, respectively (note that the claims 2 do not recite the pair of latch nodes as "output" nodes, and thus the limitation is met by the reference).

As to claims 4-7 and 11, the cross-coupled inverters are within the second latch of Coughlin, Jr et al.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Forsyth.

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As to claim 1, note Fig. 2 where the recited second and first latches read on latches 102 and 222, respectively.

As to claim 2, the cut-off device reads on FET 224 and the control signal is signal RESTORE.

5. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Trimberger et al.

As to claim 1, note Fig. 2, where the recited second and first latches read on latches 22 and 21, respectively.

As to claim 2, the cut-off device reads on the circuitry which receives the control signal SAVE STATE.

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Alwais.

As to claim 1, note Fig. 2, where the recited second and first latches read on latches 32 and 58, respectively.

As to claim 2, the cut-off device reads on the circuit 40 which receives the control signal 64.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-12, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Forsyth or Trimberger et al.

These references only disclose backing up the state of one output (i.e., /Q), but it would have been obvious to those having ordinary skill in the art to modify the backup circuits so that both Q and /Q states are backed up (in situations where both the Q and /Q output states of the D flip-flops are being used).

The details of the cutoff device (i.e., CMOS inverter and a further pair of transistors) also would have been obvious to those having ordinary skill in the art who know that control circuits for generating on/off cutoff signals typically include CMOS inverters and pass gate FETs, of which fact official notice is taken by the examiner.

8. Claims 1-12, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eliason or Chen in view of any one of Coughlin, Jr et al, Alwais, Trimberger et al and Forsyth.

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The two primary references disclose non-volatile backup circuits to restore data to a volatile latch in the event power is intentionally or unintentionally cutoff. See Fig. 4 of Eliason where applicant's first latch reads on the entire Fig. 4 circuit except for the ferroelectric capacitors and the cutoff gates T1 and T2 (not labelled in Fig. 4). Note also Fig. 6 of Chen, where applicant's first latch corresponds to latch 38 and circuit 34 corresponds to applicant's second latch (the cutoff device is formed by the FETs receiving control signal CL).

The difference between the claims and the two primary references is that the references do not use non-volatile latches as the backup circuits, but instead use ferroelectric capacitors as the mechanism for holding data states in the event of power loss.

It would have been obvious, however, to those having ordinary skill in the art to use non-volatile latches as the mechanism for holding data states in the event of power loss, the motivation being to obtain the advantages described by each of the above-noted secondary references, as well as the well-known advantages of using non-volatile latches instead of ferroelectric capacitors as the mechanism for holding data states in the event of power loss.



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As noted above, the details of the cutoff device (i.e., CMOS inverter and a further pair of transistors) also would have been obvious to those having ordinary skill in the art who know that control circuits for generating on/off cutoff signals typically include CMOS inverters and pass gate FETs, of which fact official notice is taken by the examiner.

The D flip-flop of claim 19 reads on latch 30 of Chen, and the ASIC of claim 20 reads on the Fig. 4 latch (first latch) of Eliason.

9. Claims 13-18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

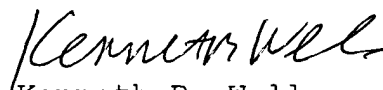
Note the several remaining references on the attached PTOL-892 form which all show latches corresponding to applicant's claimed first latch, and backup latches or memories corresponding to applicant's claimed second (state saving) latch.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth B. Wells whose telephone number is (571)272-1757. The examiner can normally be reached on Monday through Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan, can be reached at (571)272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Kenneth B. Wells  
Primary Examiner  
Art Unit 2816

June 10, 2004